

Patent Claims

1. An apparatus for filling containers with articles,
having a filling station, having a container
5 conveyor by means of which containers which are to
be filled are fed into the filling station, having
at least one article conveyor for conveying the
articles into a region of the filling station, and
having at least one filling unit by means of which
10 a filling space of the containers which are to be
filled is filled with the fed articles in the
filling station, wherein the apparatus has filling
aids, at least in the region of the filling
station, for at least some of the containers, the
15 filling aids deforming these containers before
they are filled in the filling station or
enlarging the filling openings thereof or forming
filling guides for these containers.
- 20 2. The apparatus as claimed in claim 1, wherein the
filling aids act in pairs on opposite sides of the
container, and/or wherein the filling aids act
symmetrically in respect to at least one axis of
symmetry of these containers.
- 25 3. The apparatus as claimed in claim 1, wherein the
filling aids are deforming means which form the
filling spaces of the containers by a pressing or
spreading action.
- 30 4. The apparatus as claimed in claim 1, wherein the
filling aids have deforming surfaces for deforming
the containers, the deforming surfaces being of
curved design.
- 35 5. The apparatus as claimed in claim 1, wherein the
container conveyor has carry-along elements for
accommodating and carrying along the containers
which are to be filled, and wherein the carry-

along elements are designed as filling aids for deforming the containers.

- 5 6. The apparatus as claimed in claim 5, wherein at least some of the carry-along elements have a side wall for butting against a wall of the container which is to be filled, and wherein at least one surface of this side wall is of convex design.
- 10 7. The apparatus as claimed in claim 6, wherein each container which is to be filled can be clamped, for deformation purposes, between a first front carry-along element and a second, rear carry-along element.
- 15 8. The apparatus as claimed in claim 6, wherein it has a feed conveyor by means of which the containers which are to be filled are fed onto the container conveyor, wherein the container conveyor has a curved region, and wherein a location at
20 which the containers which are to be filled are transferred from the feed conveyor to the container conveyor is arranged in the curved region.
- 25 9. The apparatus as claimed in claim 1, wherein the filling aids are guide plates which, in the filling station, cover over at least two opposite sides of each container and form filling guides.
- 30 10. The apparatus as claimed in claim 1, wherein the filling aids have spreading elements, which enlarge the filling openings of the containers.
- 35 11. The apparatus as claimed in claim 1, wherein the at least one filling unit has a picker, in particular a Delta Robot.

12. A process for filling containers with articles, in which containers which are to be filled are conveyed into a filling station by means of a container conveyor, articles are conveyed, by means of at least one article conveyor, into a region of the filling station and, there, are filled individually or in groups, by means of the filling unit, in filling spaces of the containers which are to be filled, wherein the containers which are to be filled, at least in the region of the filling station, are deformed or provided with filling aids which enlarge filling openings of these containers or form filling guides for these containers.
13. The process as claimed in claim 12, wherein the filling spaces of the containers which are to be filled are at least more or less elastically deformed.
14. The process as claimed in claim 12, wherein the containers which are to be filled are conveyed to the filling station by means of carry-along elements on the container conveyor, wherein the containers are deformed by means of these carry-along elements, and wherein the containers which are to be filled are transferred to the container conveyor, and discharged therefrom, in a curved region of the same.
15. The process as claimed in claim 12, wherein the containers which are to be filled have been partially filled as they arrive in the filling station, and wherein they are completely filled in the filling station.